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GB 1561971 GB 0638689

(58) Field of search
E1D

(54) Elliptical frame, and framework

(57) A frame is in the form of an ellipse. A tapering framework comprises 2 elliptical frames. The framework is joined by welding at 1.

FIG. 1

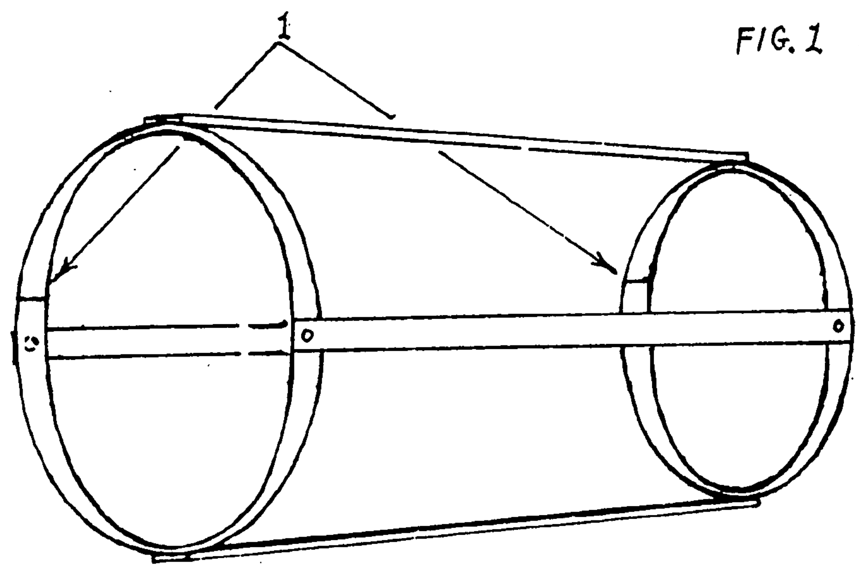

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FIG. 1

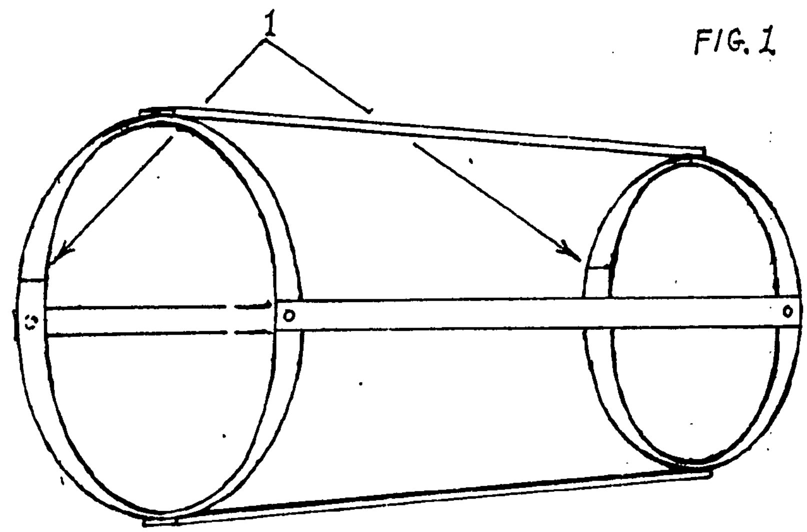
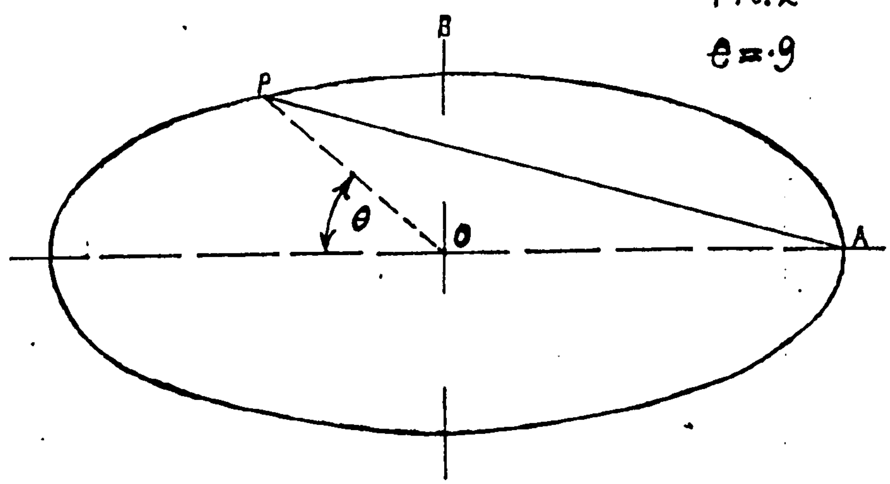


FIG. 2



SPECIFICATION

An elliptical cross-section framework

1 The invention is suitable for construction engineering and a drawing of an elliptical cross-section framework using two frames is shown and with reference to the drawing, is shown joined by welding at 1. The framework is tapering.

2 The present invention claims a specific length of material prior to forming into an elliptical frame by a calculation from the nature of the ellipse.

3 Referring to Fig. 2 of the drawing, point P is shown, which is one end of the line and position A being the other end. The length P to A is measured from the drawing or alternatively calculated. This length, so found, is multiplied by π giving the perifery of the ellipse.

4 The length of the line may be calculated and directions for calculating the length, P to A follows. Referring to the drawing of an ellipse, Fig. 2.

Step, 1, length of ordinate to major circle (major circle not showh)
= sine of the angle θ multiplied by the length A, semi axis.

Step, 2, length of ordinate of the ellipse
= result of step, 1, multiplied by ratio B/A, of ellipse.

Step 3, length along axis from ordinate,
= cotangent of the angle multiplied by the result of step, 1.

Step, 4, temporary angle at centre of ellipse
= tangent $^{-1}$ of, the result of step 2, divided by the result of step, 3. And this result can be obtained from, tangent $^{-1}$ of (B/A of ellipse divided by cotangent θ of ellipse.)

Step, 5, the required angle to the point on the perifery of the ellipse θ, minus the temporary angle, = difference of angle.

Step, 6, the require angle θ added to difference of angle, = new temporary angle to major circle (major circle not shown)

Step, 7, the sine of angle of step, 6, multiplied by the length A, semi axis,
= ordinate to major circle.

Step, 8, length of the required ordinate to ellipse = the result of step, 7, multiplied by B/A of ellipse

Step, 9, the required lenght along axis from ordinate = cotangent of required angle θ at the centre of the ellipse multiplied by the result of step 8. The length of the ordinate of ellipse.

Step, 10, total length along axis from the ordinate to point P, refer to Fig. 2 of drawing,
= the result of step, 9, added to the semi major axis of ellipse.

Step, 11, the square root of the addition of the square of the result of step, 8, and the square of the result of step, 10 = the length of the line P to A.

Step, 12, the length of this line. The result of step, 11, the length P to A of Fig. 2 of the drawing, is multiplied by π, to give the perifery of the ellipse.

5 Formula, e = sine^{-1} (cos. B/A) is used to find dimension B of the ellipse of individual frames in the tapering framework proposed.

6 The ellipse to be drawn by the method of arcs from each focus of the ellipse to mark points on the perifery of the ellipse at their intersection.

CLAIMS

1. An elliptical frame of correct specified dimensions, part of a framework, produced according to the following claims, by the use of the information discovered, in the features of the ellipse.

2. The technical information here expressed, is that with reference to the drawing, the required angle of arc at the centre of the ellipse, to the point on the perifery of the ellipse and major axis of the ellipse, from which the length of the perifery, necessary for manufacturing may be obtained, in accordance with claim 1, is as follows, the angle is, sine^{-1}e, of the ellipse, until e = ·60, radians of e, converted to degrees, until e = ·7071 and then continuing at this angle $40\frac{1}{2}°$, which is, radians of e = ·7071 converted to degrees, until e = ·90.

3. An elliptical frame as in claim 1 and the technical information as in claim 2 and as explained in the accompanying drawing and substantially as described therein.

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DERWENT-WEEK: 200242

TITLE: Path section recording method for digital map card has curved path section approximated by straight line sections defined by successive radius vectors from given centre point

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INT-CL (IPC): G06F017/10, G09B029/00

ABSTRACTED-PUB-NO: DE 10057636C

BASIC-ABSTRACT:

NOVELTY - The path section recording method has a curved path section represented by a series of straight path sections , with the start and end point of the curved path section recorded in a memory (10). The curved path section between the start and end points is provided as a circular segment, with successive radius vectors from a given centre point defining the start and end points of the straight path sections approximating the curve.

USE - The method is used for recording a path section for a digital map card used with a vehicle onboard navigation device.

ADVANTAGE - The path section recording method has a reduced storage requirement for a curve approximation.

DESCRIPTION OF DRAWING(S) - The figure shows a block circuit diagram of a navigation device with a processor, a memory and a display device.

Memory 10

CHOSEN-DRAWING: Dwg.1/2

TITLE-TERMS: PATH SECTION RECORD METHOD DIGITAL MAP CARD CURVE PATH SECTION APPROXIMATE STRAIGHT LINE SECTION DEFINE SUCCESSION RADIUS VECTOR CENTRE POINT

DERWENT-CLASS: P85 T01 T04

EPI-CODES: T01-H01B3A; T01-J07D3; T04-K01;

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